

## REVIEW OF *netTrekker d.i.*

<b>Title</b>	netTrekker d.i.
<b>Platform</b>	All capable of supporting the designated browsers.
<b>Software requirements</b>	Netscape 5 or higher, or Internet Explorer 6 or higher, or Firefox (recommended), or Safari Flash Player 9 or higher
<b>Publisher</b>	Thinkronize Inc.
<b>Support offered</b>	FAQ list, contact options, and help links
<b>Target language</b>	English
<b>Target audience</b>	K-12 students and teachers
<b>Price</b>	\$1,595 per school building per year. Multiple building and district discounts are available.
<b>Publication Year</b>	2005

### Review by Leslie Huff, Washington State University

Today's public school classrooms aim at educating an extremely diverse population of students. Sitting side by side in the same classroom, mainstream classrooms are likely to have advanced learners, students whose first language is not English, struggling readers, and other students who, for a vast array of reasons, do not fit the mold of average students. Addressing the wide range of learning needs of this diverse population is essential if all students are to succeed academically. One approach that helps teachers identify and target the needs and strengths of their students is differentiated instruction.

Differentiated instruction is a student-centered method of teaching that emphasizes an active, meaning-focused approach to education (Tomlinson & Allan, 2000). It highlights the importance of scaffolding, student engagement, and student choice to promote learning for all students, regardless of their age, ability, interests, or linguistic backgrounds. Similar to a common strategy used in language teaching, a key component of differentiated instruction is providing materials at multiple levels of ability so that all students are challenged but still feel information is accessible at their level. Research support for this component has long shown that the most efficient learning takes place when learners are neither bored nor anxious (Howard, 1994; Jensen, 1998) and when the challenge inherent in the task matches the skills of the learner (Csikszentmihlyi & Csikszentmihlyi, 1988; Vygotsky, 1986). In addition, differentiated instruction suggests that students who require scaffolds to support their learning should have them available (Fitzgerald & Graves, 2004). It also addresses the needs of language learners by providing resources at multiple levels, scaffolding learning, and engaging students as active agents in the learning process.

*netTrekker d.i.*, a web-based, educator-evaluated search engine, provides resources that enable teachers to easily incorporate the elements of differentiated instruction (scaffolding, engagement, and choice) to maximize student learning in their classrooms. Because it is a web-based tool, *netTrekker d.i.* requires no additional set-up on the part of the school or teacher. Teachers and students access *netTrekker d.i.* in a school computer lab or a single computer classroom depending on how they choose to use the search engine and what technology is available. Schools simply use a user name and password to access the search engine. Although *NetTrekker d.i.* has specific components that focus on English language learners (ELLs), it is not intended as a tool only for ELLs; all students can benefit from its incorporation into the curriculum. It is convenient and easy for both teachers and students to use. Overall, *netTrekker d.i.* is a highly effective and useful tool in differentiating classroom instruction.

*netTrekker d.i.* provides scaffolds that help teachers and students navigate the search engine to find appropriate learning material. By dividing subjects by school level (elementary, middle, and high school), *netTrekker d.i.* makes information on pertinent subjects easily accessible. It also helps to differentiate instruction by providing readability ratings for the Web sites it houses within each school level. These readability ratings have been assessed by educators based on composite scores of standard, long-used readability formulas and frameworks including the Automated Readability Index (Senter & Smith, 1967), the Flesch-Kincaid Index (Flesch, 1948), the Gunning Fog Index (Gunning, 1968), the McLaughlin SMOG Readability Formula (McLaughlin, 1969), and the Lexile Framework for Reading (MetaMetrics, 2008). *netTrekker d.i.* assigns a one to five readability rating to each Web site included in its search engine based on the average scores from these readability assessments (*netTrekker d.i.*, 2005). Additional readability assessments have been made through formulas based on grade level expectations. Because readability ratings are presented for each site in a search, teachers and students can easily recognize material that matches a student's reading level. Figure 1 shows how readability ratings are presented on *netTrekker d.i.*

The screenshot displays the search results for "Arctic Ice" on the *netTrekker d.i.* website. At the top, a search bar shows "Search Results: Arctic Ice" with "( 1-3 of 3 )" results. Below the search bar, there are tabs for "All", "Pictures", "Primary Source", "Audio", "Video", and "Teachers' Domain". A "Readability" filter is set to "All", with buttons for ratings 1 through 5. On the right side, there are links for "Image Search", "References", "Teacher Tools", and "My Tools" (Profile, Preferences, Saved Searches, Search History, Help, Contact Us). The main content area lists three search results, each with a readability rating indicated by a vertical bar on the right:

- Teachers' Domain: Antarctica: Sea Ice** (Readability Level 4). The description mentions a video segment adapted from NOVA. The overall rating is 4.5 stars. The evaluator is WGBH Educational Foundation.
- National Geographic Magazine: Arctic Ice** (Readability Level 3). The description mentions Jennifer Steinberg Holland's article. The overall rating is 4.5 stars. The evaluator is Stephen Carter.
- AMNH: Arctic Sea Ice 1997-2006** (Readability Level 5). The description is partially visible.

Each result includes a "Dictionary" link and a "Report Problem" link. The bottom of the page shows a navigation bar with "Home", "About", "Contact Us", and "Feedback".

Figure 1. Screenshot of *netTrekker d.i.*'s Readability ratings.

In fact, scaffolding is one area in which *netTrekker d.i.* truly excels. From the very first page, teachers and students visit, visual clues are provided with illustrated subject markers to help students guide their search. Figure 2 shows the scaffolds provided on the initial search page for ESL learners, which is similar

to that for other learners. For example, users can search by subject or grade level, and, once they have found sites that specifically address the topic they are looking for, they can search by readability rating for a site that fits their needs.



Figure 2. Initial subject page for ESL learners.

*netTrekker d.i.* also provides a dictionary hotlink through which every word on a site is linked to an online English-English dictionary. Students can click on a word and find the definition, part of speech, or pronunciation instantaneously. There is also a "read-aloud" function that allows students to listen to words, phrases, or entire texts that they highlight. The read-aloud function also works with the dictionary definitions that students may have accessed through hotlinks. This read-aloud function offers dual mode support for struggling readers, pronunciation exposure for language learners, and verification for students who are unsure of a particular word or phrase they are reading. The read-aloud function can be used to support understanding during any search for information using *netTrekker d.i.* Additional resource links, such as maps, encyclopedias, and grammar guides, are also available to help scaffold learning.

To maximize student engagement, and thereby learning, it is important to tap into the diverse interests of students. The *netTrekker d.i.* database houses over 180,000 web sites to support the learning interests of a diverse student population. *NetTrekker d.i.* compiles web sites on its search engine through proactive exploration and user recommendations. This variety of sites allows students and teachers to choose resources providing opportunities that may increase interest-based motivation in learning. While many of the sites available through *netTrekker d.i.* could be accessed through other search engines, searching *netTrekker d.i.* provides a level of security for teachers and parents because all sites on *netTrekker d.i.*

have been reviewed by educators. Students searching *netTrekker d.i.* will not happen upon inappropriate sites when they are trying to find information for their school work. Once students have *netTrekker d.i.* accounts, they can access the search engine from any computer with an Internet connection, including computers at home, in public libraries, and any other location. As noted previously, unlike other commonly used search engines, *netTrekker d.i.* rates each site for readability and provides read-aloud options for students who struggle with reading comprehension. Moreover, only academically relevant, age-appropriate sites are available to students.

A search for "hydrosphere" provides an example of the variety of sites and learning resources available through *netTrekker d.i.* (Figure 3). Seventy-eight different sites about the earth's hydrosphere are available for elementary school students and teachers to access.

**EcoPibes: Eco-Juegos y mas** [Dictionary >](#)  
[http://www.ecopibes.com/jueg ... index.html](http://www.ecopibes.com/jueg...index.html)  
 "Green" games and activities from a terrific Argentinean site dedicated to helping Spanish-speaking children learn about the environment and sustainable development. This section of the site features a mix of crossword and word search puzzles, coloring pages, code-cracking activities, guessing games, and more -- with an environmental theme. Other areas of the site provide good, readable information on earth (biomes, climates, solar system, planets); environmental issues like global warming and waste; biodiversity; and the history of the environmental movement including highlights of major events like Love Canal and Chernobyl.  
[English Language Learners](#) > [ELL Skill Development](#) > [Content Area Science](#)  
**Overall Rating:** ★★★★★ [More >](#)  
 Educator/Evaluator: [Nora Priest](#)  
[Report Problem](#)

**Observe a Visual Model of Earth's Spheres** [Dictionary >](#)  
[http://www.classzone.com/boo ... ualization](http://www.classzone.com/boo...ualization)  
 An interesting look at the four overlapping, interacting spheres that make up the Earth. Keys are included at the bottom to help understand the Biosphere model.  
[Science](#) > [Earth Science](#) > [Earth's Features](#)  
**Overall Rating:** ★★★★★ [More >](#)  
 Educator/Evaluator: [Jacob Dawson](#)  
[Report Problem](#)

**Environmental Education for Kids: Water Wonders** [Dictionary >](#)  
[http://www.dnr.state.wi.us/o ... /index.htm](http://www.dnr.state.wi.us/o.../index.htm)  
 This site from the Environmental Education for Kids contains colorful and detailed information on water resources. Site covers fascinating tips and facts, as well as engaging quizzes on the wonderful world of water. Best suited for grades 3-6.  
[Science](#) > [Earth Science](#) > [Natural Resources](#) > [Water](#)  
**Overall Rating:** ★★★★★ [More >](#)  
 Educator/Evaluator: [Michael Robinson](#)  
[Report Problem](#)

Figure 3. Partial results from a search for hydrosphere sites.

The sites provide information on oceans, rivers, deltas, and other water formations, as well as about particular habitats or animals in and around the water, the water cycle, and many other water-related topics. The variety available to students allows them to learn about the hydrosphere by exploring their own interests. This is essential to learning because interesting tasks motivate learners to be more engaged in learning and the learning process (Meltzer & Hamann, 2004; Tomlinson & Allan, 2000). Interesting tasks can also lead to students becoming more autonomous in their learning (Tomlinson & Allan, 2000). Additionally, students begin at an early age to access information from a variety of sources and integrate

the information they find, thereby helping them develop important academic skills such as critical thinking and synthesis.

Another example of a resource that provides opportunities for students to be engaged in their learning is *netTrekker d.i.*'s "people search." This function allows for searches by name, era, occupation, gender, and/or heritage. It lets teachers provide broad parameters for an assignment, such as "research a 20<sup>th</sup> century female artist" or "find a prominent humanitarian and research his/her work," and allows students to discover people whom they find exciting, intriguing, or otherwise motivating to study. Through the people search on *netTrekker d.i.*, students, even ELLs, have a high likelihood of success in finding someone who fits the criteria of an assignment and who interests them personally. Offering multiple categories to search for people presents students with an opportunity to follow choices that interest them and allows them to learn in ways that best suit their learning styles, more fully explained below. Figure 4 shows some of the categories available for searching on the *netTrekker d.i.* people search. As with other searches on *netTrekker d.i.*, many of the people and web sites found in a famous people search could be found via other search engines, but the navigational scaffolds along with the reading scaffolds that *netTrekker d.i.* offers provide students, especially those with limited L2 reading and language skills, with a likelihood of success and assistance understanding what they find. Moreover, what they find through *netTrekker d.i.* will be appropriate, accurate, and comprehensive.

**netTrekker d.i.** Elementary Middle High Standards  
All Learners English Learners 21<sup>st</sup> Century Skills

Web Person Image Standards  
Name:

**Famous Person Search**

**Name**

**Gender** ☐ Male ☐ Female

**Time Period**

<input type="checkbox"/> B.C.	<input type="checkbox"/> 17th Century (1600 A.D. - 1699 A.D.)
<input type="checkbox"/> 1st - 8th Century (1 A.D. - 799 A.D.)	<input type="checkbox"/> 18th Century (1700 A.D. - 1799 A.D.)
<input type="checkbox"/> 9th - 14th Century (800 A.D. - 1399 A.D.)	<input type="checkbox"/> 19th Century (1800 A.D. - 1899 A.D.)
<input type="checkbox"/> 15th Century (1400 A.D. - 1499 A.D.)	<input type="checkbox"/> 20th Century (1900 A.D. - 1999 A.D.)
<input type="checkbox"/> 16th Century (1500 A.D. - 1599 A.D.)	<input type="checkbox"/> 21st Century (2000 A.D. +)

**Occupation/Profession**

<input type="checkbox"/> Artists (Visual Art e.g. Painting)	<input type="checkbox"/> Legal Professionals
<input type="checkbox"/> Athletes	<input type="checkbox"/> Mathematicians
<input type="checkbox"/> Authors/Writers	<input type="checkbox"/> Medical Professionals
<input type="checkbox"/> Criminals	<input type="checkbox"/> Military Figures
<input type="checkbox"/> Educators	<input type="checkbox"/> Philosophers
<input type="checkbox"/> Entertainers/Musicians	<input type="checkbox"/> Political Figures
<input type="checkbox"/> Entrepreneurs	<input type="checkbox"/> Religious/Spiritual Figures
<input type="checkbox"/> Explorers	<input type="checkbox"/> Revolutionaries
<input type="checkbox"/> Humanitarians	<input type="checkbox"/> Scientists/Engineers
<input type="checkbox"/> Inventors/Creators	

**Ethnic/Cultural Heritage**

<input type="checkbox"/> African American	<input type="checkbox"/> European [East]
<input type="checkbox"/> African	<input type="checkbox"/> European [West]
<input type="checkbox"/> American	<input type="checkbox"/> Hispanic American
<input type="checkbox"/> Asian American	<input type="checkbox"/> Hispanic
<input type="checkbox"/> Asian	<input type="checkbox"/> Indian (Far East)
<input type="checkbox"/> Australian	<input type="checkbox"/> Middle Eastern
<input type="checkbox"/> Canadian	<input type="checkbox"/> Native American

**Features**  
[Timeline](#)  
[Famous Person](#)  
[Image Search](#)  
[References](#)  
[Teacher Tools](#)

**My Tools**  
[Profile](#)  
[Preferences](#)  
[Saved Searches](#)  
[Search History](#)  
[Help](#)  
[Contact Us](#)

Figure 4. *NetTrekker d.i.*'s Famous Person Search options.

Equally important to interest-based choice, or *what* students learn, is the choice of information sources, or *how* students learn. Students vary greatly in their learning styles and preferences, and *netTrekker d.i.* is a tool that supplies learners with resources from which they can learn and discover sites that best suit their individual learning needs. Whether students are auditory, visual, or kinesthetic learners, the Web sites housed in the *netTrekker d.i.* database offer learners choices of media/mode that support their learning preferences. For example, *netTrekker d.i.* embraces multiple styles of learning by incorporating sites with interactive, informational, visual, and auditory instructions and activities. Teachers and students can choose a site that matches students' learning styles simply by selecting an image search, clicking on a site at the appropriate reading level in a Web search, or reading the short synopsis of the site on the search results page. Language learners can use the "legend," located below the synopsis, to find Web sites that support their learning with visual content cues by checking for videos, charts, and picture symbols.

The hydrosphere sites mentioned previously are good examples of the variety of learning strategies offered through *netTrekker d.i.* links. The hydrosphere sites offer a range of readability levels (from level 2 to level 5) and provide additional information through hyperlinked texts, visuals (e.g., photos, diagrams, maps), videos, guided activities (e.g., brainstorming, drawing, poetry writing), animated systems/cycles, and other forms of instruction. Having access to such variety helps all learners gain access to information about the subject and enhances their individual learning by using learning activities and modes that teachers and learners agree best suit the learners' needs.

*netTrekker d.i.* can be used for an array of classroom activities to meet a variety of goals. For example, in order to find the characteristics of sedimentary rock formations, students can work in pairs to find the similarities and differences among these formations. One partner reads the information while the other takes notes. Or, in order to investigate an assigned planet, groups can use *netTrekker d.i.* and present the information to the class later on a poster, or in a skit or presentation. Or perhaps individual students can use *netTrekker d.i.* to investigate a specific event of the American Civil Rights Movement about which they will write a newspaper article, or language learners can compare an event or person from their home country or culture with one from the American Civil Rights Movement. At times when students are finished with seatwork early, *netTrekker d.i.* can be used to learn more about a topic discussed in class. Language learners can use downtime to complete listening or reading tasks on Web sites accessed through *netTrekker d.i.*'s ESL learner's search. The opportunities for learning with *netTrekker d.i.* and its uses in the classroom are plentiful. Once students understand how to search, they need only the topic or parameters of their inquiry to begin using *netTrekker d.i.* in their learning. *netTrekker d.i.* can be used as a resource for structured classroom activities, independent learning opportunities, and guided research-based learning.

More important for teachers of English language learners, *netTrekker d.i.* offers an entire section devoted to the special needs of ESL learners. It includes a search option that covers the same subjects available to all learners, plus extra subjects devoted to developing language skills and cultural understanding, such as holidays and traditions from a variety of countries. Web sites that focus on the four skills taught in a traditional language learning setting (i.e., reading, writing, speaking, and listening) are available through the *netTrekker d.i.* ESL learners' search. The language learning sites include visual and aural depictions of pronunciation, read-and-listen activities, and other multimodal instructional techniques. [Figure 5](#) shows an example of a pronunciation site housed on *netTrekker d.i.*

As another specific resource for ESL students, *netTrekker d.i.* offers language translation tools which translate between English and 14 other languages. The translation tools include children's and picture dictionaries, allowing students to obtain meaning without necessarily having to read. Furthermore, many content areas, including math, history, and geography, also have Spanish or other language sites linked to support content area learning. The benefits of developing a learner's first language as a means of promoting second language knowledge is well documented (Crawford, 2004; Herrera & Murry, 2005). These kinds of supports and scaffolds provide students of limited English proficiency with avenues for



success despite linguistic barriers. Figure 2 above shows the subject page for ESL learners and the pictorial guides students can use to aid them in their search.

Home

Guide

Objectives

Lessons

Exercises

Final Tests

Credits

Lesson 1: /l/ vs /r/

Lesson 2: /s/ vs /z/

The position of the tongue when making the sound /l/

The position of the tongue when making the sound /r/

(The pictures from Teaching American English Pronunciation by Avery, P. & Ehrlich, S., (1992). Oxford University Press. (p. 22))

**Tip for making the sound /l/**

To make /l/ sound, the air goes over the sides of your tongue and out of your mouth.

Click to listen this /l/ sound and repeat it as many as you can.

Figure 5. A pronunciation page accessible through *netTrekker d.i.*

Navigating through the *netTrekker d.i.* system is simple for all levels of learners and teachers. *netTrekker d.i.* provides visual guides to help language learners and struggling readers find what they are looking for. *netTrekker d.i.* presents students with an option to save their searches so that the searches can be easily revisited. The search engine provides ample scaffolding, not only for the content it displays, but also for the navigation of its site so that all users can guide their own learning successfully.

As with any educational technology, *netTrekker d.i.* has its shortcomings. While the searches are easy to use and results are plentiful, the searches are not exhaustive. For example, well-known, commonly reported-on people, such as Jane Goodall, the famous primatologist, are included, but finding a unique, rarely investigated personality, such as Ruth Patrick, a limnologist specializing in water ecology and clean-up, is more difficult. However, this inconvenience is outweighed by the fact that what is found will be useful and appropriate.

Another inconvenience may be experienced in linking to some sites. Occasionally, links are not working or not able to access the sites. This does not appear to be a common problem when using *netTrekker d.i.*, but it can be a source of frustration, particularly for learners and teachers on a tight schedule. *netTrekker d.i.* does provide avenues to report problems such as these to the company for remedy or removal.

A lack of time is a common source of frustration for teachers attempting to incorporate differentiated instruction strategies into their classrooms while also trying to meet standardized curricular needs. Having

to locate resources that are accessible for students at a variety of levels complicates the differentiation process even more. *netTrekker d.i.* provides teachers with a plethora of resources at all levels of ability in one place, far superior to standard search engines. It is a convenient and effective resource that teachers can use to differentiate their lessons. They can use it as a tool to challenge and engage all students during a computer lab session, as homework, or as part of ongoing projects in the classroom, thereby maximizing students' learning. *netTrekker d.i.* categorizes, differentiates, and scaffolds material, allowing teachers to focus on effectively engaging every student in learning.

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## ABOUT THE REVIEWER

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